REMARKS

Claim 29 was previously cancelled and no claims are cancelled herein. Claims 1, 18, and 24 are amended herein and no new claims are added. Accordingly, claims 1-28 remain under prosecution in this application.

In the Specification

The Examiner has objected to the specification because page 4, first paragraph of the specification states " . . . 'the application of the tensile forces does not exacerbate the defect'. . . while, according to the original filed specification, page 2, lines 16-19, 23-24, page 5, line 22, page 6, line 6, page 9, lines 11, 14, 23-24, the walls of the defect are shifted under stress." The Examiner asked for clarification of these two sections of the specification. The undersigned believes that these two sections of the specification are easily understood (and are not contradictory) when read in context. Specifically, the first section referred to by the Examiner (page 4, first paragraph), when read in its full context, states "the method and apparatus of the present invention performs a non-destructive test in that the application tensile forces does not exacerbate the defect 100 (i.e. does not leave the defect any worse after the test than it was before the test). Thus, there is no migration of defect 100 toward surface 102." From this first section of the specification, the definition of a non-destructive test is established in that it is a test that does not exacerbate the defect. Further, this section of the specification goes on to further explain that a "defect that is not exacerbated by a force," means that the force does not leave the defect any worse after the test, than it was before the test. Lastly, this portion section of the specification also explains that if a defect is not left any worse after the test than it was before the test, there is no migration of the defect. The second section of the specification referred to by the Examiner (". . .the walls of the defect are shifted under stress") is not contradictory to the first section set out above and close review of these two above-referenced sections of the specification show that they are fully consistent with one another. The phrase "does not exacerbate the defect" means that the defect is not left any worse after the test than it was before the test. The phrase "the walls of the defect are shifted under stress" simply means that, under test conditions, the stress induced is of sufficient magnitude to shift the walls of the defect but is not of sufficient magnitude to leave the defect any worse after the test than it was before the test (i.e. the defect does not grow worse because of the test). Thus, in view of the

above explanation, it is clear that these two portions of the specification do not conflict with one another but rather they fully compliment one another.

35 USC § 112, first paragraph

Claims 1, 18 and 24 are rejected under 35 USC § 112, first paragraph as failing to comply with the written description requirement. Specifically, the Examiner has objected to the phrase "no migration" of subsurface defect 100 towards the surface 102. The Examiner sets forth two basis for the rejection under 35 USC § 112, first paragraph. The undersigned has amended claims 1, 18, and 24 to remove the phrase ". . .there is not migration of the subsurface kissing unbond defect toward a specimen surface. . ." and accordingly, the Examiner's objection to claims 1, 18, and 24 under 35 USC § 112, first paragraph is now moot.

35 USC § 112, second paragraph

Claims 1-14, 18-23, 27 and 28 are rejected under 35 USC § 112, second paragraph as being indefinite. Due to the reasons stated above in conjunction with the rejection under 35 USC § 112, first paragraph. Because the phrase "is sufficient to exacerbate a thermal discontinuity caused by the subsurface kissing unbond defect" has been removed from claims 1 and 18, the rejection under 35 USC § 112, second paragraph is believed to be moot.

35 USC § 103

Claim 24 is rejected under 35 USC § 103 as being unpatentable over Thomas et al in view of Devitt et al. Thomas discloses a means of using ultrasonic energy applied to a specimen to cause the faces of the defects and cracks in the specimen to rub against each other and create heat. (See column 5, lines 13-15 of Thomas). Claim 24 requires amongst other limitations, ". . .heating the specimen. . ." and ". . .apply a force to the specimen, wherein the magnitude of the force is sufficient to exacerbate a thermal discontinuity. . ." Where is the teaching in Thomas that relates to "applying a force to the specimen, wherein the magnitude of the force is sufficient to exacerbate a thermal discontinuity caused by a subsurface kissing unbond defect of said specimen. . ."? The teaching in Thomas of using ultrasonic energy to cause the faces of defects and cracks in the specimen to rub against each other and create heat is not the same as the

claimed ". . .applying a force to the specimen, wherein the magnitude of the force is sufficient to exacerbate a thermal discontinuity. . ." A thermal discontinuity, at least in the context of the instant application, relates to a material's propensity to conduct heat and is totally unrelated to a material's ability to generate heat as taught by Thomas. Devitt does nothing to supplement the deficiencies the teaching of Thomas. Specifically, Devitt teaches a method for applying stress to component 10 to cause a subsurface defect to open at surface 18. By applying a stress to component 10 as taught by Devitt, the basis of the defects and cracks of the specimen are forced apart from one another thereby preventing them from rubbing against one another as taught by Thomas. Thus, the undersigned does not understand how Devitt supplements the teaching of Thomas. In fact it appears to the undersigned that Devitt teaches away from the technique taught by Thomas. Specifically, Thomas teaches a means of ***bringing together*** faces of the defects and cracks in the specimen to rub against each other. In contrast, Devitt teaches manipulating the faces of a defect to ***move apart*** in order to "open at surface 18." "Bringing together" is the opposite of "moving apart." The undersigned does not believe that two techniques compliment one another or can be reconciled with one another. In view of the arguments set forth above, the undersigned believes that claim 24 is now in condition for allowance.

Claims 1, 18 and 24

Claims 1, 18 and 24 have all been amended to include the following phrase "...applying a force to a specimen, wherein the magnitude of the force is sufficient to exacerbate a thermal discontinuity caused by said subsurface kissing unbond defect, wherein said force is non-destructive in that it does not leave the subsurface kissing unbond defect any worse, after the force is removed, than it was before the force was applied." This phrase fully describes the non-destructive nature of the present invention in that the force as applied to the specimen is sufficient to exacerbate a thermal discontinuity caused by a kissing unbond defect but it is not destructive that it leaves the defect any worse, after the force is removed than it was before the force was applied. None of the references of record teach or suggest the invention set forth in independent claims 1, 18 and 24 and accordingly, the undersigned believes that these claims and their respectively associated dependent claims are now in condition for allowance.

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Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 50-3145, under Order No. 209529-81571 from which the undersigned is authorized to draw.

Dated: May 24, 2005

Respectfully submitted,

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